

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
20 January 2005 (20.01.2005)

PCT

(10) International Publication Number
WO 2005/006022 A1

(51) International Patent Classification⁷: **G01V 1/38, 3/00**

(21) International Application Number:

PCT/NO2004/000181

(22) International Filing Date: 18 June 2004 (18.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

200333169

10 July 2003 (10.07.2003) NO

(71) Applicant (for all designated States except US): **NORSK HYDRO ASA** [NO/NO]; N-0240 Oslo (NO).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **JOHNSTAD, Svein, Erling** [NO/NO]; Gullstølslien 19, N-5152 Bønes (NO).

(74) Agent: **JOHNSEN, Venche, Høines**; Norsk Hydro ASA, N-0240 Oslo (NO).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

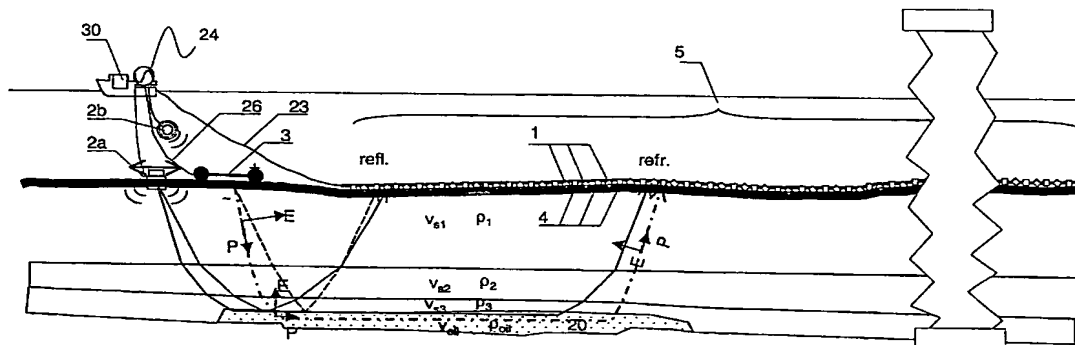
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **GEOPHYSICAL DATA ACQUISITION SYSTEM**



(57) Abstract: The invention comprises a geophysical sensor apparatus for use under water in the sea, comprising a plurality of seismic sensors (1) for sensing seismic waves associated with underground formations, and a plurality of EM-sensors constituted preferably by electrodes (4) for sensing electromagnetic waves associated with said underground formations. In a preferred receiver cable configuration embodiment of the invention, the geophysical sensor apparatus comprises a seismic receiver cable with a linear array of a plurality of seismic sensors (1) and EM-sensors arranged inside a flexible outer skin (25), with said EM-sensors having electrodes on the outside of said outer skin. The cable is operated on the seafloor by a surface vessel, said vessel towing an electromagnetic transmitter antenna in addition to the seismic source.